

anticis fere contiguis, subtrigonatis, erectis; *tibiis* posticis apice muticis; *unguiculis* bifidis. *Prosternum* angustissimum.

Type, *Eumæa pulchra*, Baly.

Distinguished from the preceding genus by the slender antennæ, the costate elytra, and the different form of the sulcation of the thorax. In *Eumæa* the depression extends nearly across the surface of the disk, not quite reaching its lateral border, either side being impressed by a large deep fovea. In *Nicea* the sulcation is broader, extending entirely across the disk to the lateral border, and has its front and hinder edges much less distinctly marked.

Eumæa pulchra.

E. elongata, postice paullo ampliata, convexa, læte fulva, nitida; oculis, pedibus elytrisque nigris, his fascia lata fulva ornatis, singulatim infra basin transversim sulcatis, 5-costatis, costis duabus exterioribus valde elevatis, cæteris indistinctis; antennis fulvofuscis, articulis apice piceis.

Long. $4\frac{1}{2}$ lin.

Hab. New Guinea.

VI.—*Observations on Raphides and other Crystals in Plants.*

By GEORGE GULLIVER, F.R.S.

[Continued from vol. xiv. p. 252.]

Ternstrœmiaceæ.—Many sphæraphides, but no raphides, in the leaves and bark of young twigs of *Camellia euryoides* and of a garden variety of *Camellia*.

Vitaceæ.—Leaves, and their modifications or appendages, of *Vitis odoratissima*, *V. apiifolia*, two species of *Ampelopsis*, and *Cissus discolor*: all abounding more or less in raphides and sphæraphides, as is the case in every plant which I have examined of this order.

Zygophyllaceæ.—The crystals in the bark of *Guaiacum officinale* are large prisms, like those of *Quillaja*, *Iris*, &c. The prisms have commonly four equal faces, and two of them are occasionally broader than the other two, as in *Fourcroya*. We have already noticed that some of the prisms are triangular; and this and the flattened square are such forms as might result from a longitudinal cleavage of the equally four-sided shafts, in one case diagonally from angle to angle, and in the other from the centre of each of the two opposite faces. But I have at present seen only imperfect evidence of such cleavage.

Melastomaceæ.—Leaves and twigs of *Melastoma*, sp.: sphæraphides plentiful, especially in the liber and mesophlœum; but no raphides.

Passifloraceæ.—No raphides, but an abundance of beautiful sphæraphides, in the petioles and leaves of two species of *Passiflora*.

Compositæ.—I have already described ('Annals,' Jan. 1863, and July 1864, p. 55) the crystals in the ovary-coat of this order. They are generally very remarkable in the suborder Cynarocephalæ; and their form may differ curiously even in two nearly allied species of one genus. Thus in *Centaurea nigra* the beautiful and numerous crystals are about $\frac{1}{1000}$ th of an inch long and $\frac{1}{6400}$ th thick, with three or four faces and angular pointed ends; while in *C. scabiosa* and *C. ragusina* the crystals are not so elongated, but are lozenge-shaped, square or cubical, and regularly about $\frac{1}{2400}$ th of an inch in diameter.

Oleaceæ.—The British plants of this order are devoid of raphides; and only a few sphæraphides were found in the leaves of *Olea latifolia*.

Orchidaceæ.—Leaves of *Goodyera repens*, *G. discolor*, *Listera ovata*, *Neottia spiralis*, *Cypripedium calceolus*, *C. spectabile*, *C. venustum*, *C. insigne*, *C. sp.*, *Zygopetalum Mackayi*, *Z. crinitum*, *Dendrobium nobile*, *Epipactis palustris*, *E. latifolia*, *Cymbidium sinense* and *C. aloifolium*: in all these, raphides are more or less abundant, but scantier in the last three than in the before-named plants of the order; plentiful in the stem, ovary, and placenta, and scanty in the sepals and petals, of *Cypripedium spectabile*; and the raphis-cells well seen through the leaf of *Neottia*. In the leaves of *C. insigne* (if I have not mistaken the plant) were also numerous larger crystal prisms, like those of *Fourcroya*.

These observations are all to the same effect as the former ones ('Annals,' March 1864). Every species which I have yet examined of this order affords raphides, while I have failed to find them at all in the few species tried for the purpose in the two orders Hydrocharidaceæ and Scitamineæ, between which the order Orchidaceæ stands in Professor Balfour's 'Manual of Botany.'

Iridaceæ.—In *Iris deflexa* the crystal prisms have commonly four equal sides, and the ends as if cut off obliquely from angle to angle or from face to face; while in *Witsenia corymbosa* the prisms are mostly truncate; and in this last plant they are much more plentiful in the pale base than in the other part of the leaf. *Trichonema columnæ* and the garden *Crocus*: crystal prisms in the leaves. *Sisyrinchium anceps*, *S. Bermudianum*, and *S. striatum*: neither crystal prisms nor raphides in the leaves. And I have failed to find such crystals, after repeated trials during several years and at various seasons, in a plant of *S. anceps* growing side by side in my garden with species of *Narcissus*, *Orni-*

thogalum, *Muscari*, and *Iris*, although in these last four plants either raphides or the larger prisms always abound.

Amaryllidaceæ.—Raphides plentiful in the leaves, scape, and ovary of *Sternbergia lutea*, and in the leaves of *Brunsvigia Josephinæ*; but very scanty in a garden hybrid *Amaryllis*, and not seen at all in a leaf of *A. Belladonna*. Leaf of *Pancreatium maritimum*: raphides small, and not plentiful. *Alstræmeria*, sp.: raphides in the scape, leaf, perianth, filaments, and anthers; abounding also in the bulb, bulb-scales, and leaves of *Leucojum vernum*. Leaf of *Fourcroya gigantea*: a few true raphides and an abundance of larger crystal prisms; these last are four-sided, mostly with two faces broader than the other two, and the ends either wedge-shaped or obliquely pointed.

[To be continued.]

Edenbridge, Dec. 8, 1864.

VII.—*On the Affinities of some doubtful British Fishes.*

By THEODORE GILL*.

1. OPHIDIUM IMBERBE, Montf.

In 1811, in the 'Memoirs of the Wernerian Society,' Montagu† described and figured the fish identified by him with the *Ophidium imberbe*. It was "taken on the south coast of Devon," and in "length was about 3 inches;" the body "ensiform;" "the dorsal fin commences immediately above the base of the pectoral, and is at first not so broad, and usually not so erect as the other part," and the caudal is cuneiform and obtusely pointed. "The colour is purplish brown, disposed in minute speckles; and along the base of the anal fin are about ten small bluish-white spots, regularly placed, but scarcely discernible without a lens, possibly peculiar to younger fishes." The rays were respectively—pectoral 11, dorsal about 74, anal 44, caudal 18 or 20. Such was the first detailed account of *Ophidium imberbe*, based on a British fish, and such the authority on which the subsequent British faunists have preserved the species in their catalogues. By Turton‡, Fleming§, Jenyns||, Yarrell¶, Gray**, &c., it has been retained in the genus *Ophidium* (§ *Fieras-*

* Communicated by the author, having been read before the Academy of Natural Sciences, Philadelphia.

† Mem. Wern. Soc. i. (1811) p. 95, pl. 4. fig. 2.

‡ Brit. Faun. (1807) p. 83.

§ Brit. An. (1828) p. 201.

|| Man. (1835) p. 231.

¶ Brit. Fishes, ii. (1841) p. 412.

** List Brit. An. Brit. Mus., Fishes, (1851) p. 51.